APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,450	02/23/2002	Jian Zhu	Li 25	8324

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ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _18 July 2007_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _2,3,5 and 6_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _2,3,5 and 6_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _23 February 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The amendment filed on 7/18//2007 has been entered and fully considered.

2.   Claims 2, 3, 5, and 6 are pending in the instant Application. Claims 1, 4, and 7-

10 have been cancelled. Claims 2, 3, 5, and 6 are the base independent claims.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   **Claims 2, 3, 5, and 6** are rejected under 35 U.S.C. 102(b) as being anticipated

by Yang et al (Yuan Yang and Jianchao Wang, "A New Self-Routing Multicast Network",

IEEE, December 1999), hereinafter referred to as Yang.

Yang teaches a self-routing mechanism in a multi-stage switch based on the

content of the packets fed to the switching elements where the content of the packet

determines the states of the switching elements.

3.   Regarding **claims 2 and 5**, Yang discloses, a method and system for routing

packets through a switching network, wherein the switching network includes multiple

stages of switching elements **(See Figures 1, 2, 4, and 5)**, each one of the switching

elements receiving packets as local input packets on its input ports and producing

packets as local output packets on its output ports each of the packets having a plurality

of in-band control signals where each one of the in-band control signals is utilized in a

corresponding one of the switching elements as the local in-band control signal for the

corresponding switching element to make switching decisions **(See page 1309, section**

7.1),, the method comprising: coding each one of the in-band control signals of the

packets into a plurality of bits based on a predetermined coding algorithm, and

generating, with reference to the coding scheme **(See Table 1)**, the output bits of the

local output packets at each one of the switching elements based on a subset of the bits

in the corresponding one of the in-band control signals for each one of the switching

elements to route the local input packets arriving at the corresponding switching

element, **(See page 1310, Column 1, Lines 3-20)** wherein each one of the switching

elements is a _bicast cell_ **(In Yang's system each switching element is capable of**

multicasting and therefore is a bicast cell and the definition is shown on page

1300, 2nd Column and the corresponding figures are 3A-3F. Yang's definition and

description of the state of the switching connection for bicast cell is exactly like

the Applicant's description of bicast cell defined on page 169 of the specification

and exactly matches Applicant's Figures 2C-2F) and the local input packets to each

one of the switching elements includes idle **(Page 1300 case IV, Page 1306 Lines 13-**

20, Page 1310 Lines 25-27, Table 1), 0-bound **(Table 1)**, 1-bound **(Table 1)** and bicast

packet types **(Page 1310, Lines 20-25)**, wherein each one of the packet types

corresponds to a distinct in-band control signal **(Cases 1-4 on page 1300 and in**

general 2nd column on page 1300), the coding includes coding each of the in-band

control signals by at least two bits **(See Section 5.1, 1st paragraph)**, and the coding

algorithm includes coding the bits such that the first bit of the code for the in-band

control signal corresponding to a 0-bound packet type **(See Case 1 on page 1300)** is

<u>different from the first bit of the code for the in-band control signal corresponding to a 1-</u>

<u>bound packet type (See Case 2 on page 1300). (Further Yang clearly shows in</u>

<u>Table 1 on page 1308 the encoding scheme for the tag values used as in-band</u>

<u>control signal in the packets routed in the multi-stage multicast switch. Clearly</u>

<u>three bits are used adequately meeting the claimed limitation of "using at least</u>

<u>two bits". Also it is evident from Table 1 the first bit of the code for the 0 bound</u>

<u>packet (i.e. tag = 0) is different from the first bit of the 1-bound packet (i.e. tag = 1)</u>

<u>where the first bit is the most significant bit).</u>

4.   Regarding **claims 3 and 6**, Yang discloses, a method and system for routing

packets through a switching network, wherein the switching network includes multiple

stages of switching elements **(See Figures 1, 2, 4, and 5)**, each one of the switching

elements receiving packets as local input packets on its input ports and producing

packets as local output packets on its output ports each of the packets having a plurality

of in-band control signals where each one of the in-band control signals is utilized in a

corresponding one of the switching elements as the local in-band control signal for the

corresponding switching element to make switching decisions **(See page 1309, section**

7.1),, the method comprising: coding each one of the in-band control signals of the

packets into a plurality of bits based on a predetermined coding algorithm, and

generating, with reference to the coding scheme **(See Table 1)**, the output bits of the

local output packets at each one of the switching elements based on a subset of the bits

in the corresponding one of the in-band control signals for each one of the switching

elements to route the local input packets arriving at the corresponding switching

element, **(See page 1310, Column 1, Lines 3-20)** wherein each one of the switching

elements is a _routing cell_ **(In Yang's system each switching element is capable of**

sorting under a linear order of 0-bound, idle, and 1-bound. This is effectively

illustrated on Page 1306, in the second column in the first paragraph. Given this

and the fact that the Applicant defines routing cell on page 161 of the

specification simply as a sorting cell associated with a set consisting of 0-bound,

idle, 1-bound and linearly ordered one can easily conclude Yang's cells are also

routing cells.) and the local input packets to each one of the switching elements

includes idle **(Page 1300 case 4, Page 1306 Lines 13-20, Page 1310 Lines 25-27,**

Table 1), 0-bound **(Table 1)**, 1-bound **(Table 1)** and bicast packet types **(Page 1310,**

Lines 20-25), wherein each one of the packet types corresponds to a distinct in-band

control signal **(Cases 1-4 on page 1300 and in general 2nd column on page 1300)**,

the coding includes coding each of the in-band control signals by at least two bits **(See**

Section 5.1, 1st paragraph), and the coding algorithm includes coding the bits such

that the first bit of the code for the in-band control signal corresponding to a 0-bound

packet type **(See Case 1 on page 1300)** is different from the first bit of the code for the

in-band control signal corresponding to a 1-bound packet type **(See Case 2 on page**

1300). (Further Yang clearly shows in Table 1 on page 1308 the encoding scheme

for the tag values used as in-band control signal in the packets routed in the

multi-stage multicast switch. Clearly three bits are used adequately meeting the

claimed limitation of "using at least two bits". Also it is evident from Table 1 the

first bit of the code for the 0 bound packet (i.e. tag = 0) is different from the first

bit of the 1-bound packet (i.e. tag = 1) where the first bit is the most significant

bit.)

Response to Arguments

1.   Applicant's arguments filed on 7/18/2007 have been fully considered but they are

not persuasive.

2.   In the Remarks, from pages 5-8, Applicant provides a detailed analysis of Yang's

invention with the sole purpose of establishing that Yang requires use of three bits in

defining a routing value and cites Yang's section 7.2 as a support.

3.   In the Remarks, on page 8 in the last paragraph, with respect to all independent

claims Applicant argues that since Yang's coding scheme requires three bits per tag

value unlike the Applicant the coding scheme the 102 rejection is improper.

Examiner respectfully disagrees. The limitation in question in all of the

independent claims requires "the coding includes coding each bit of the in-band control

signals by at least two bits".   Clearly Yang uses three bits to code the in-band control

signals or tag values shown in Table 1 on page 1306 and the Applicant concurs that is

the case in the Remarks on page 8. **However, requiring at least two bits does not**

exclude using three bits. Yang adequately addresses the claimed limitation and

therefore the 102 rejection is maintained.

4.   In the Remarks, on page 9, in the last two paragraphs, with respect to all

independent claims Applicant argues that Yang fails to teach the limitation requiring

coding the bits such that the first bit of the code for the in-bound control signal

corresponding to a 0-bound packet type is different from the first bit of the code for the

in-bound control signal corresponding to a 1-bound packet type. Applicant further states that Yang teaches a coding scheme in which the first bit of the 0-bound packet type is identical to a 1 bound packet type.

Examiner respectfully disagrees. Location of first bit in a string of bits is ambiguous as it could refer to the least or most significant bit. In fact Yang routinely makes such distinctions and for instance is illustrated in the 2nd paragraph of page 1310. Given that one can start counting the first bit from either the least or most significant bit then one can easily conclude that Yang meets the limitation in question. That is if one takes the most significant bit as the first bit, and then referring to Yang's table, tag 0 is represented by 000 and tag 1 is represented by 001 and it is clear that the first bit of tag 0 is different from the first bit of tag 1 and hence Yang still reads on the limitation in question.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
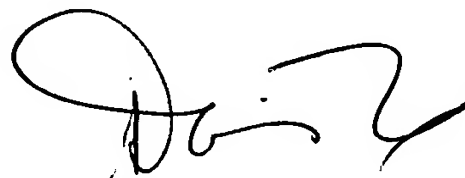
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HM
10-01-2007

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